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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/588,481 | 08/01/2006 | Soon Ho Ahn | LEE0082US | 8797 |

23413 7590 07/06/2010
CANTOR COLBURN, LLP
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| EXAMINER |
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WEINER, LAURA S

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| ART UNIT | PAPER NUMBER |
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1795

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| NOTIFICATION DATE | DELIVERY MODE |
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07/06/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

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|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/588,481 | Applicant(s) AHN ET AL. | |
| | Examiner /Laura S. Weiner/ | Art Unit 1795 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-14, 16-22 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) 26-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-14, 16-22, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of a first additive being a biphenyl and a second additive being cyclohexylbenzene in the reply filed on 2-11-2010 is acknowledged.
2. Newly submitted claims 26-29 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 26 claims an electrolyte solvent where the second additive cannot be a cyclohexylbenzene. Claim 27 which depends from claim 26 claims that the first additive can be a biphenyl but claim 10 has been amended so that the first additive can no longer be a biphenyl. Claim 29 which depends from claim 28 which depends from claim 26 claims that the first additive can be a biphenyl but claim 10 has been amended so that the first additive can no longer be a biphenyl.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 26-29 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Arguments

3. Applicant's arguments with respect to claims 10-14, 16-22, 24-25 have been considered but are moot in view of the new ground(s) of rejection.

The rejection of claims 10-17, 18-25 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn. Since applicant has removed biphenyl from claim 10, a new species was found which was tert-butylbenzene for the first additive and biphenyl for the second additive.

Claim Rejections - 35 USC § 102

4. Claims 10-14, 16-22, 24-25 are rejected under 35 U.S.C. 102(b)/(e) as being anticipated by Abe et al. [(WO 02/059999)/(US 7,294,436)].

Abe et al. ('436) teaches a battery comprising an electrolyte comprising 0.1-10 wt% of a tert-alkylbenzene compound [*first additive*] in combination with 0.1-1.5 wt% of a biphenyl compound [*second additive*]. Abe et al. teaches in column 4, lines 45-53, that the tert-alkylbenzene compound has such a high oxidation potential as +4.6V to 5.0V so does not decompose under a locally occurring high voltage such as a higher than 4.2V. Abe et al. teaches in column 3, lines 1-10, that the biphenyl decomposes by oxidation at a potential of 4.5V or lower. Abe et al. teaches in column 6, lines 13-20, that the range of the tert-alkylbenzene more preferably 1-5 wt%. Abe et al. teaches in column 6, lines 29-56, that the electrolyte comprising a solvent comprising EC, PC, VC,

lactones, DMC, EMC, etc. and salts such as LiPF₆, LiBF₄, LiClO₄, etc. Abe et al. teaches in columns 7-8, a battery comprising a LiCoO₂ cathode, artificial graphite anode, a polypropylene separator and an electrolyte comprising LiPF₆ dissolved in EC/PC/DEC and 2.5 wt% of tert-butylbenzene [*first additive*] and 0.9 wt% of biphenyl [*second additive*].

Claim Rejections - 35 USC § 103

5. Claims 10-14, 16-17, 18-22, 24-25 are rejected under 35 U.S.C. 102(b)/(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Abe et al. [(WO 02/059999)/(US 7,294,436)].

Abe et al. ('436) teaches a battery comprising an electrolyte comprising 0.1-10 wt% of a tert-alkylbenzene compound [*first additive*] in combination with 0.1-1.5 wt% of a biphenyl compound [*second additive*]. Abe et al. teaches in column 4, lines 45-53, that the tert-alkylbenzene compound has such a high oxidation potential as +4.6V to 5.0V so does not decompose under a locally occurring high voltage such as a higher than 4.2V. Abe et al. teaches in column 3, lines 1-10, that the biphenyl decomposes by oxidation at a potential of 4.5V or lower. Abe et al. teaches in column 6, lines 13-20, that the range of the tert-alkylbenzene more preferably 1-5 wt%. Abe et al. teaches in column 6, lines 29-56, that the electrolyte comprising a solvent comprising EC, PC, VC, lactones, DMC, EMC, etc. and salts such as LiPF₆, LiBF₄, LiClO₄, etc. Abe et al. teaches in columns 7-8, a battery comprising a LiCoO₂ cathode, artificial graphite

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anode, a polypropylene separator and an electrolyte comprising LiPF₆ dissolved in EC/PC/DEC and 2.5 wt% of tert-butylbenzene [*first additive*] and 0.9 wt% of biphenyl [*second additive*].

Since Abe et al. teaches the same first additive compound, a tert-alkylbenzene, specifically a tert-butylbenzene and the same second additive, a biphenyl then inherently the same first additive compound having an oxidation initiation potential of more than 4.2V or 4.2-5.3 V or 4.5-4.9 V and a second additive compound with an oxidation initiation voltage of more than 4.2 V or 4.2-5.3 V or 4.5-4.9 V which is higher in oxidation initiation potential than the first additive, and deposits oxidative products or forms a polymer film in oxidation must also be obtained.

In addition, the presently claimed property of first additive compound having an oxidation initiation potential of more than 4.2V and a second additive compound with an oxidation initiation voltage of more than 4.2 V which is higher in oxidation initiation potential than the first additive, and deposits oxidative products or forms a polymer film in oxidation would have obviously have been present once the Abe et al. product is provided. *In re Best*, 195 USPQ 433 (CCPA 1977).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Laura S. Weiner/ whose telephone number is 571-272-1294. The examiner can normally be reached on M-H (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura S Weiner/
Primary Examiner
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June 29, 2010